

AMENDMENTS TO THE CLAIMS

Claim 1 (amended). A massage method [for] comprising the steps of:  
providing a seat or body support system [having] including more than one expandable [chambers] chamber and including a pressure system and an exhaust system for each expandable chamber [and an exhaust system for each expandable chamber];  
[and] providing a controller [for operating] configured to operate the pressure and [exhausts] exhaust systems [system] according to multiple selectable predetermined message control index sequences; [the method comprising:]  
selecting a message sequence by selecting one of the message control index sequences causing the controller to alternately: [for operating the pressure system and exhaust system to control the pressures in each of said expandable chambers; and  
controlling the pressures in each of the expandable chambers by connecting each of the expandable chambers to said]  
provide fluid communication between selected ones of the expandable chambers and the pressure system to produce an inflow of a fluid to each of the expandable chambers; and [followed by operating the exhaust system to produce]  
produce an outflow of fluid from each of the previously inflated expandable chambers by operating the exhaust system [to produce a message sequence in which each of the expandable chambers are selectively inflated and deflated by fluid flow to and from each of the expandable chambers]; and  
selecting message intensity by allowing fluid pressure within the selected chambers to increase only until a selected variable target pressure is reached.

Claim 2 (currently amended). The method of claim 1 [further characterized by] in which the step of providing a seat or body support system includes:

providing [the] a pressure system [as] that includes a source of pressurized fluid [; providing] and a supply valve connected to the controller for controlling fluid flow from the [pressure] source of pressurized fluid to each of the expandable chambers; [and]

providing [an] each exhaust system with an exhaust valve connected to the

controller for controlling the fluid flow from a previously inflated expandable chamber; and

[in a manner] operating the supply and exhaust valves to produce individual chamber to chamber [inflate] inflation followed by chamber to chamber [deflate] deflation.

Claim 3 (currently amended). The method of claim 2 [further characterized by providing] in which:

the step of providing a seat or body support system includes providing an exhaust system [as a] that includes a common exhaust; and operating the exhaust system includes:

providing fluid communication between [connecting said more than one] the expandable chambers [to said] and the common exhaust; and

opening [said] the common exhaust in accordance with the massage index sequence.

Claim 4 (currently amended). The method of claim 2 [further characterized by] in which:

the step of providing a seat or body support system includes:

providing [the] a pressure [systems] system [as] that includes a pressure pump; and

providing [the] an exhaust system [as] that includes an exhaust pump; and including the additional step of [connecting said] selectively and alternately providing fluid communication between each expandable chamber and the pressure pump and [said] the exhaust pump [to said array of expandable chambers] in accordance with the massage index sequence.

Claim 5 (currently amended). The method of claim 1 [further characterized by] including the additional steps of:

providing a user initiated switch [switching means]; [and]

providing a range of desired massage [indexes] index sequences in accordance with user selected preferences; and

[selecting] operating the switch to select one of [said] the desired massage [indexes] index sequences from said range to produce individual chamber to chamber [inflate] inflation followed by chamber to chamber [deflate] deflation.

Claim 6 (currently amended). The method of claim 1 [further characterized by] in which the step of providing a seat or body support system includes providing [the more than one expandable chambers as] expandable chambers in a back and seat support.

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Claim 7 (currently amended). The method of claim 1 [further characterized by] including the additional step of operating the pressure system for each expandable chamber to equalize the pressure between predetermined ones of the expandable [chamber] chambers as each of the predetermined ones of the expandable chambers are selectively inflated and deflated.

Claim 8 (currently amended). The method of claim 1 [further characterized by] including the additional steps of:

providing a pressure sensor;

providing multiple valves and a pump;

providing a microcontroller programmed in response to a signal from said pressure sensor to operate the multiple valves and a pump to [conduct an initial inflate of] initially inflate the [more than one] expandable chambers to a gross pressure level with all of the valves initially opening; [said] the initial opening occurring prior to [the] cyclically connecting [of] each of the expandable chambers to the pressure source in accordance with the selected massage index sequence.

Claim 9 (currently amended). The method of claim 1 [further characterized by] in which:

the step of providing a seat or body support system includes providing the [more

than one] expandable chambers as a series of zones; [said] and

the step of selecting a message [index including] sequence includes selecting a message index sequence that first [inflating] inflates each of [said] the zones in a series fashion [; said message index thereafter including] then deflates [deflating] each of [said] the zones in a reverse series fashion.

Claim 10 (currently amended). The method of claim 1 [further characterized by] in which:

the step of providing a seat or body support system includes providing the [more than one] expandable chambers as a series of zones including a first zone, a second zone and a third zone;

the step of selecting a [the] message sequence [index including] includes selecting a message index sequence that:

[equalizing] equalizes the pressure in the first and second zones by fluid transfer therebetween;

thereafter [inflating] inflates only the first zone and [deflating] deflates the second zone while the first zone remains inflated;

thereafter [equalizing] equalizes the pressure in the first and second zones;

thereafter [inflating] inflates the second zone;

thereafter [deflating] deflates the first zone while the second zone remains inflated;

equalizing the pressure in the second and third zones by fluid transfer therebetween; and

thereafter inflating only the third zone and deflating the second zone while the third zone remains inflated.

Claim 11 (currently amended). The method of claim 1 [further characterized by] in which:

the step of providing a seat or body support system includes providing [the more than one air cells as] first and second air cells (O, 1); and

the step of selecting a massage sequence includes providing and selecting a  
massage index sequence that cyclically varies the pressure in the air cells by:

inflating the first air cell;

equalizing pressure between the first and second air cells;

deflating the first air cell;

reinflating the first air cell;

controlling the valved communication to equalize pressure between the  
first and second air cells following reinflation of the first air cell; and

deflating the first air cell.

Claim 12 (currently amended). The method of claim 2 [further characterized  
by] in which:

the step of providing a seat or body support system includes providing [the more  
than one air cells as] first and second air cells (O, 1); and

the step of selecting a massage sequence includes providing and selecting a  
massage index sequence that cyclically varies the pressure in the air cells by:

inflating the first air cell;

equalizing pressure between the first and second air cells;

deflating the first air cell;

reinflating the first air cell; controlling the valved communication to  
equalize pressure between the first and second air cells following reinflation of the first  
air cell; and

deflating the first air cell.

Claim 13 (currently amended). The method of claim 1 [further characterized  
by] in which the step of providing a seat or body support system includes providing [the  
more than one] expandable chambers as a series of zones including zone 0; zone 1; zone  
2; zone 3; zone 4; zone 5; zone 6; zone 7; and

the step of selecting a massage sequence includes providing and selecting a  
massage index sequence [including] that includes equalizing the pressure in zones 0 and

1 by reducing the pressure in zone 1 and increasing the pressure in zone 0; inflate zone 0; deflate zone 1; equalize the pressure in zones 1 and 0 by fluid transfers from zone 0 to zone 1 reducing the pressure in zone 0 and increasing the pressure in zone 1; inflate zone 1; deflate zone 0; equilibrate zones 2 and 1 [(air transfers from zone 1 to zone 2 reducing the pressure in zone 1 and increasing the pressure in zone 2)]; inflate zone 2; deflate zone 1; equilibrate zones 5 and 2 [(air transfers from zone 2 to zone 5 reducing the pressure in zone 2 and increasing the pressure in zone 5)]; inflate zone 5; deflate zone 2; equilibrate zones 6 and 5 [(air transfers from zone 5 to zone 6 reducing the pressure in zone 5 and increasing the pressure in zone 6)]; inflate zone 6; deflate zone 5; equilibrate zones 7 and 6 [(air transfers from zone 6 to zone 7 reducing the pressure in zone 6 and increasing the pressure in zone 7)]; inflate zone 7; deflate zone 6; equilibrate zones 6 and 7 [(air transfers from zone 7 to zone 6 reducing the pressure in zone 7 and increasing the pressure in zone 6)]; inflate zone 6; deflate zone 7; equilibrate zones 5 and 6 [(air transfers from zone 6 to zone 5 reducing the pressure in zone 6 and increasing the pressure in zone 5)]; inflate zone 5; deflate zone 6; equilibrate zones 2 and 5 [(air transfers from zone 5 to zone 2 reducing the pressure in zone 5 and increasing the pressure in zone 2)]; inflate zone 2; deflate zone 5; equilibrate zones 1 and 2 [(air transfers from zone 2 to zone 1 reducing the pressure in zone 2 and increasing the pressure in zone 1)]; inflate zone 1; deflate zone 2; repeat.

Claim 14 (currently amended). The method of claim 2 [further characterized by] in which the step of providing a seat or body support system includes providing [the more than one] expandable chambers [as] including a series of zones including zone 0; zone 1; zone 2; zone 3; zone 4; zone 5; zone 6; zone 7; and

the step of selecting a massage sequence includes providing and selecting a massage index sequence including equalizing the pressure in zones 0 and 1 by reducing the pressure in zone 1 and increasing the pressure in zone 0; inflate zone 0; deflate zone 1; equalize the pressure in zones 1 and 0 by fluid transfers from zone 0 to zone 1 reducing the pressure in zone 0 and increasing the pressure in zone 1; inflate zone 1; deflate zone 0; equilibrate zones 2 and 1 [(air transfers from zone 1 to zone 2 reducing the pressure in

Q3 zone 1 and increasing the pressure in zone 2)]; inflate zone 2; deflate zone 1; equilibrate zones 5 and 2 [(air transfers from zone 2 to zone 5 reducing the pressure in zone 2 and increasing the pressure in zone 5)]; inflate zone 5; deflate zone 2; equilibrate zones 6 and 5 [(air transfers from zone 5 to zone 6 reducing the pressure in zone 5 and increasing the pressure in zone 6)]; inflate zone 6; deflate zone 5; equilibrate zones 7 and 6 [(air transfers from zone 6 to zone 7 reducing the pressure in zone 6 and increasing the pressure in zone 7)]; inflate zone 7; deflate zone 6; equilibrate zones 6 and 7 [(air transfers from zone 7 to zone 6 reducing the pressure in zone 7 and increasing the pressure in zone 6)]; inflate zone 6; deflate zone 7; equilibrate zones 5 and 6 [(air transfers from zone 6 to zone 5 reducing the pressure in zone 6 and increasing the pressure in zone 5)]; inflate zone 5; deflate zone 6; equilibrate zones 2 and 5 [(air transfers from zone 5 to zone 2 reducing the pressure in zone 5 and increasing the pressure in zone 2)]; inflate zone 2; deflate zone 5; equilibrate zones 1 and 2 [(air transfers from zone 2 to zone 1 reducing the pressure in zone 2 and increasing the pressure in zone 1)]; inflate zone 1; deflate zone 2; repeat.

Claim 15 (new). The method of claim 1 in which the step of selecting massage intensity includes selecting a massage index sequence that achieves a selected variable target pressure within each selected chamber by scaling inflation time.

Claim 16 (new). The method of claim 1 in which:

the step of providing a seat or body support system includes providing a pressure sensor in fluid communication with each chamber and connected to the controller; and

the step of selecting massage intensity includes selecting a massage index sequence that achieves a selected variable target pressure within each selected chamber by increasing fluid pressure in each chamber only until the controller receives respective signals from the pressure sensors indicating that their respective target pressures have been reached.

Claim 17 (new). The method of claim 1 in which the steps of selecting message sequence and message intensity are accomplished simultaneously by selecting a single message control index sequence.

Claim 18 (new). The method of claim 1 in which the step of providing a seat or body support system includes providing an exhaust system configured to actively evacuate chambers by drawing fluid from them.

Claim 19 (new). The method of claim 18 in which:  
the step of providing a seat or body support system includes providing an exhaust system that includes an exhaust pump; and  
operating the exhaust system includes:  
providing fluid communication between selected chambers to be deflated and the exhaust pump; and  
operating the pump to evacuate the selected chambers.

Claim 20 (new). A seat or body support apparatus comprising:  
more than one expandable chamber;  
a pressure system connected to each expandable chamber and configured to provide fluid into the expandable chambers;  
an exhaust system connected to each expandable chamber and configured to produce an outflow of fluid from the expandable chambers;  
a controller connected to the pressure and exhaust systems and configured to:  
control message sequence by alternately operating the pressure and exhaust systems for selected chambers according to a predetermined message control index sequence; and  
control message intensity by allowing fluid pressure within the selected chambers to increase only until a selected variable target pressure is reached.



Claim 21 (new). A seat or body support apparatus as set forth in claim 20 in which:

the pressure system includes a source of pressurized fluid connected by fluid supply paths to respective supply valves positioned to selectively provide fluid communication between each expandable chamber and the source of pressurized fluid;

the exhaust system includes exhaust valves connected to each respective chamber and configured to control the fluid flow from the respective chambers;

the controller is operatively connected to the supply and exhaust valves and is configured to inflate selected chambers by opening corresponding ones of the supply valves and to deflate selected chambers by opening corresponding ones of the exhaust valves; and

the exhaust valves are distinct from the supply valves and the fluid supply paths to minimize dwell time between inflation and deflation.

Claim 22 (new). A seat or body support apparatus as set forth in claim 20 in which the exhaust system is configured to actively evacuate chambers by drawing fluid from them.

Claim 23 (new). A seat or body support apparatus as set forth in claim 22 in which the exhaust system includes an exhaust pump connected to the controller and operable to draw fluid from selected chambers.

Claim 24 (new). A seat or body support apparatus as set forth in claim 20 in which:

the controller is further configured to provide a range of different massage index sequences; and

the apparatus includes a user actuable switch connected to the controller and configured to select between the different massage index sequences.

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